



## **Comparison between visibility measurements obtained from satellites and ground**

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This paper describes the results obtained by the direct comparison between the visibility values obtained from satellite remotely sensed data and ground measurements in an area of interest near the Paphos International Airport in Cyprus. During the satellite overpasses, visibility values are obtained from the nearby airport and sun-photometer measurements are acquired using the MICROTOPS II sun-photometer. It has been found from previous studies that there is direct relationship between the aerosol optical thickness and the visibility values so the use of sun-photometer is an essential tool for ground validations. Water vapor measurements have also compared between the relative humidity (RH) measurements monitored in the airport and those measured in-situ using the sun-photometer. It has been found that visibility values is strongly related with the aerosol and water vapor concentrations and this can be taken into consideration when satellite remote sensing is used for meteorological and environmental

monitoring applications. Considering that the monitoring of aerosol concentrations becomes a high environmental priority particularly in urban area, this study explores the direct relationship between the aerosol optical thickness and visibility and highlights the importance of further validations.